

HDN/ESC57

3 May 1999

From: Commander, Naval Facilities Engineering Command

Subj: SEISMIC DESIGN CRITERIA FOR NEW FACILITIES

Ref: (a) NAVFAC ltr HDN/CHENG of 17 Mar 98

(b) NAVFAC ltr HDN/96-102 of 27 Jun 96

1. The seismic criteria for new construction specified in references (a) and (b) is superceded by copy of this letter. The seismic design criteria for new buildings is TI-809-04, Seismic Design For Buildings, Dec 1998. This manual replaces both NAVFAC P-355, Seismic Design For Buildings, 1992 and NAVFAC P-355.1, Seismic Design Guidelines For Essential Buildings, 1986. All FY00 projects shall use the new criteria.

2. TI-809-04 is an Army publication, however, the Navy was a participant in its development. The primary basis for TI-809-04 is the 1997 edition of the National Earthquake Hazard Reduction Program (NEHRP) Provisions for Seismic Regulations for New Buildings and Other Structures, Federal Emergency Management Agency (FEMA) document 302. The terminology and general design procedures are incorporated by reference to this document. A working knowledge of the 1997 NEHRP Provisions will be a requirement to execute a successful design.

3. This new guidance also adopts the latest United States Geologic Survey (USGS) seismicity maps which provides contour lines for values of building seismic response for all geographic locations. The traditional seismic zone maps associated with the Uniform Building Code (UBC) seismic design provisions are no longer valid. There are no longer locations designated as non-seismic areas. Site specific development procedures are available for CONUS and foreign locations when required.

4. The new guidance is intended to provide qualified designers with the necessary criteria and direction for the performance-based seismic analysis and design of new military buildings, and the non-structural systems and components in the buildings. This is the first time seismic provisions will be incorporated into all structures, including those in the previously designated low seismic zones. Wind loads will no longer be assumed to govern in those old low and zero seismic zones. Designs must now incorporate seismic and wind provisions, and the appropriate details for each design.

5. This new criteria will require greater use of dynamic analysis procedures, and many designers will be required to accomplish something with which they have little or no experience. Therefore, some confusion and artificially inflated design costs will be experienced. We do not expect significant increases in building costs because of the new design procedures and the detailing requirements. Detailing requirements are a normal practice for high seismicity areas in

the western United States. The largest expected impact is the learning curve for those engineers in the lower seismicity areas to adopt standard seismic details to local practice.

6. Points of contact concerning these matters are Mr. Howard Nickerson, Navy Seismic Safety Coordinator, NFESC EC DET Applied Engineering Division, at 202-433-8758, e-mail NickersonHD@nfesc.navy.mil or John Lynch, NAVFAC Criteria Office, at 757-322-4207, e-mail at lynchjj@efdlant.navy.mil. The manual is available on the NAVFAC Criteria Office website at <http://www.efdlant.navy.mil>.

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